## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #1 - Habitat Monitoring and Management, Very-Low Intensity and Complexity

### Scenario Description:

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where very-low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxs, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 16 hours of labor per year.

### Before Situation:

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of very-low intensity and complexity.

### After Situation:

Widlife habitat is improved by implementation of annual adaptive management actions of very- low intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 640

**Scenario Cost:** $689.73 **Scenario Cost/Unit:** $1.08

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | $42.39 | 3 | $127.17 |
| Rangeland/grassland field monitoring kit | 967 | Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only. | Each | $45.96 | 1 | $45.96 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | $7.18 | 2 | $14.36 |
| ***Labor*** | | | | | | |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $20.77 | 10 | $207.70 |
| Specialist Labor | 235 | Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services. | Hour | $98.18 | 3 | $294.54 |

## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #2 - Habitat Monitoring and Management, Low Intensity and Complexity

### Scenario Description:

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxs, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year.

### Before Situation:

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of low intensity and complexity.

### After Situation:

Widlife habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Scenario Cost:** $556.66 **Scenario Cost/Unit:** $3.48

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Rangeland/grassland field monitoring kit | 967 | Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only. | Each | $45.96 | 1 | $45.96 |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | $42.39 | 1.5 | $63.59 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | $7.18 | 1 | $7.18 |
| ***Labor*** | | | | | | |
| Specialist Labor | 235 | Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services. | Hour | $98.18 | 3 | $294.54 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $20.77 | 7 | $145.39 |

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #3 - Habitat Monitoring and Management, Medium Intensity and Complexity**

**Scenario Description:**

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures). The adaptive mgmt requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt effort. Mowing of roads and trail is required to provide access for monitoring and management.

**Before Situation:**

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of medium intensity and complexity.

**After Situation:**

Wildlife habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Scenario Cost:** $2,130.67 **Scenario Cost/Unit:** $13.32

**Cost Details (by category):**

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Rangeland/grassland field monitoring kit | 967 | Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only. | Each | $45.96 | 1 | $45.96 |
| Mower, Bush Hog | 940 | Equipment and power unit costs. Labor not included. | Hour | $57.92 | 5 | $289.60 |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | $42.39 | 6 | $254.34 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | $7.18 | 4 | $28.72 |
| ***Labor*** | | | | | | |
| Specialist Labor | 235 | Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services. | Hour | $98.18 | 10 | $981.80 |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12”, Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.97 | 5 | $114.85 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $20.77 | 20 | $415.40 |

## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #4 - Habitat Monitoring and Management, High Intensity and Complexity

### Scenario Description:

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort.

### Before Situation:

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of high intensity and complexity.

### After Situation:

Wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 80

**Scenario Cost:** $2,633.25 **Scenario Cost/Unit:** $32.92

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Truck, Pickup | 939 | Equipment and power unit costs. Labor not included. | Hour | $42.39 | 6 | $254.34 |
| Rangeland/grassland field monitoring kit | 967 | Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only. | Each | $45.96 | 1 | $45.96 |
| Mower, Bush Hog | 940 | Equipment and power unit costs. Labor not included. | Hour | $57.92 | 3 | $173.76 |
| Chainsaw | 937 | Equipment and power unit costs. Labor not included. | Hour | $7.18 | 8 | $57.44 |
| Hydraulic Excavator, 1 CY | 931 | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $130.06 | 4 | $520.24 |
| ***Labor*** | | | | | | |
| Specialist Labor | 235 | Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services. | Hour | $98.18 | 10 | $981.80 |
| Equipment Operators, Heavy | 233 | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $28.85 | 4 | $115.40 |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.97 | 3 | $68.91 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $20.77 | 20 | $415.40 |

## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #5 - Development of Shallow Micro-Topographic Features with Normal Farming Equipment.

### Scenario Description:

This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.

### Before Situation:

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available for invertebrate use.

### After Situation:

Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** hours of tractor use

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Scenario Cost:** $869.84 **Scenario Cost/Unit:** $43.49

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Tractor, agricultural, 120 HP | 962 | Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included. | Hour | $62.27 | 6 | $373.62 |
| Tillage, Primary | 946 | Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs. | Acre | $17.92 | 20 | $358.40 |
| ***Labor*** | | | | | | |
| Equipment Operators, Light | 232 | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.97 | 6 | $137.82 |

## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #6 - Development of Deep Micro-Topographic Features with Heavy Equipment.

### Scenario Description:

This typical scenario is installed on open non-wetlands, where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).

### Before Situation:

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available aquatic dependent invertebrates. Vertebrate wildlife habitat is lacking diversity.

### After Situation:

Deep (6" - 12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the deep micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** Hours

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Scenario Cost:** $2,421.41 **Scenario Cost/Unit:** $121.07

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Equipment/Installation*** | | | | | | |
| Tillage, Primary | 946 | Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs. | Acre | $17.92 | 20 | $358.40 |
| Dozer, 200 HP | 928 | Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included. | Hour | $212.59 | 6 | $1,275.54 |
| ***Labor*** | | | | | | |
| Equipment Operators, Heavy | 233 | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $28.85 | 8 | $230.80 |
| ***Mobilization*** | | | | | | |
| Mobilization, large equipment | 1140 | Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits. | Each | $556.67 | 1 | $556.67 |

## Practice: 645 - Upland Wildlife Habitat Management

## Scenario: #7 - Grassland Bird Management

### Scenario Description:

This practice involves a change in the mowing regime on productive hayland by ensuring an early hay cut in mid to late May followed by a delay in the second cut of 65 days. A third cut is allowed. Research has shown that implementing this management on intensely managed hayfields will provide nearly the same productivity for grassland songbirds as a hayfield not mowed until August 1st. Facilitating practice includes 315 Herbaceous Weed Control. Resource concerns include Wildlife: food and cover.

### Before Situation:

Typical setting for this practice is agricultural dominated landscapes with large fields. These agricultural landscapes, and other large grass areas such as airports or preserves, are often the most desirable areas for grassland birds in the Northeast. Breeding success for grassland songbirds on intensively managed hayfields (3-4 cuts per summer) is nearly non-existent as the time period between mowings is too short for successful nesting. Through mowing the nests are destroyed or cover is removed making them vulnerable to predation by crows, ring-billed gulls and other predators. The reduction in nesting sites reduces the population of grassland nesting birds.

### After Situation:

Fields are a minimum of 20 acres of uninterrupted grassland with a low perimeter-to-area ratio (approx. square). First cut and all associated management including raking, bailing and manure spreading are completed by May 31st. The sequence of cutting and field management practices is allowed after 65 days. Habitat for grassland bird nesting is improved, reducing egg and nestling mortality. Nest survival and fledging rates are increased.

**Scenario Feature Measure:** Acres

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Scenario Cost:** $2,026.84 **Scenario Cost/Unit:** $101.34

### Cost Details (by category):

| Component Name | ID | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|
| ***Foregone Income*** | | | | | | |
| FI, Hay, General Grass | 2122 | General Grass Hay is Primary Land Use | Ton | $41.38 | 30 | $1,241.40 |
| ***Labor*** | | | | | | |
| Specialist Labor | 235 | Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services. | Hour | $98.18 | 8 | $785.44 |